

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
КАФЕДРА ІНОЗЕМНИХ МОВ  
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР**

**МАТЕРІАЛИ  
VIII МІЖВУЗІВСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ  
КОНФЕРЕНЦІЇ  
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ  
КАФЕДРИ ІНОЗЕМНИХ МОВ**

**“TO LIVE IN A SAFER WORLD”**

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### 3D PRINTERS IN MEDICINE

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3D printing is a process of making a three-dimensional solid object of any shape from a digital model. 3D printing is achieved using an additive process, where successive layers of material are laid down in different shapes. While 3D printing technology has been around since the 1980s, it was not until the early 2010s that the printers became widely available commercially. The industry use includes rapid prototyping, rapid manufacturing, and mass customization. At the dawn of rapid prototyping, a common predication was that 3D printing would transform manufacturing. That has not quite happened, and like so many emerging technologies, rapid prototyping has found its foothold in a surprisingly different field: medicine.

- Osteofab is a product made by a British company Oxford Performance Materials. Over the past few years, the company has also pioneered the application of the stuff, primarily through additive manufacturing. An American patient received a FDA-approved skull patch made of the material, which had been carefully molded and printed to fit 75 percent of his unique skull geometry.

- Employees at American company Organovo learned to create small fragments of artificial liver. They used different cell types instead of colors.

- A team of scientists from Cornell University (USA) is now developing a technique of restoration of damaged intervertebral discs in the 3D printer. Implementation of the technology is in its final stage.

- Fripp's printer can turn out 150 prosthetic eyes an hour—and the details, like iris color, size, and blood vessels, can be easily customized based on each patient's needs.

Additive manufacturing requires manufacturing firms to be flexible in order to remain competitive. This arc of technological development will counter globalisation, as end users will do much of their own manufacturing rather than engage in trade to buy products from other people and corporations.